CLAIMS:

1. A method of determining a likelihood of a fetus carried by a pregnant mother having a chromosomal abnormality, a first biological, parameter being suitable for screening said fetus for said chromosomal abnormality, the method comprising:

receiving first data from a first stage of pregnancy of said mother, said first data comprising data representing a first value of said first biological parameter;

receiving second data from a second, later stage of said pregnancy, said second data comprising data representing a second value of said first biological parameter; and

determining likelihood data from said first and second data, said likelihood data representing the likelihood of said fetus having a chromosomal abnormality.

2. A method as claimed in claim 1 wherein said first biological parameter is a marker for said chromosomal abnormality at one of said first and second stages of pregnancy and has substantially no value as a marker during the other of said first and second stages of pregnancy.

3. A method as claimed in claim 1 wherein said first biological parameter has a logarithm multiple of median (log MoM) value closer than one standard deviation to zero.

4. A method as claimed in claim 1, 2 or 3 wherein in a cohort of pregnancies having said abnormality said first biological parameter is selected such that a correlation coefficient of said first and second values of said parameter is greater than 0.3, preferably greater than 0.5, more preferably greater than 0.6, most preferably greater than 0.8.

5. A method as claimed in any one of claims 1 to 4 wherein said first biological marker comprises one of total hCG, PAPP-A, Inhibin – A, AFP, uE_3.

6. A method as claimed in any one of claims 1 to 4 wherein said first biological marker is not free β-LCG.

7. A method as claimed in any preceding claim wherein said first data further comprises data representing a first value of a second biological parameter, wherein said second data further comprises data representing a second value of said second biological parameter, wherein said second biological parameter is suitable for screening said fetus for said chromosomal abnormality.

8. A method as claimed in claim 7 wherein said second biological parameter is a marker for said chromosomal abnormality at one of said first and second stages of pregnancy and has substantially no value as a marker during the other of said first and second stages of pregnancy.

9. A method as claimed in claim 7 or 8 wherein in a cohort of pregnancies having said abnormality biological parameter is selected such that a correlation coefficient of said first and second values of said parameter is greater than 0.3, preferably greater than 0.5, more preferably greater than 0.6, most preferably greater than 0.8.

10. A method as claimed in claim 7, 8 or 9 wherein said second biological marker comprises on of total hCG, PAPP-A, Inhibin – A, AFP, uE_3.

11. A method as claimed in claim 7, 8 or 9 wherein said second biological marker is not free β-LCG.

12. A method as claimed in any preceding claim wherein said first data further comprises data obtained from an ultrasound scan performed on said mother.

13. A method as claimed any preceding claim wherein said determining of said likelihood data comprises determining likelihood ratio data, said likelihood ratio data comprising a ratio of a probability of obtaining said first and second data in a pregnancy without said abnormality to a probability of said first and second data being obtained in a pregnancy in which said fetus has said abnormality.

14. A method as claimed in claim 13 further comprising adjusting said first and second data responsible to one or more covariates prior to determining said likelihood ratio.

15. A method as claimed in claim 13 or 14 further comprising adjusting said likelihood ratio by a prior probability factor dependent upon an age of said mother.

16. A method as claimed in any one of claims 1 to 15 wherein said first stage of pregnancy comprises a first trimester of said pregnancy and said second stage of said pregnancy comprises a second trimester of said pregnancy.

17. A method as claimed in any one of claims 1 to 15 wherein said first stage of pregnancy comprises a stage of said pregnancy from 8 to 13 weeks, and wherein said second stage of said pregnancy comprises a stage of said pregnancy from 14 to 22 weeks.

18. A method as claimed in any preceding claim wherein said fetus is a human fetus.

19. A method as claimed in any preceding claim wherein said chromosomal abnormality comprises Down's Syndrome.

20. A method of determining whether a pregnant woman is at an increased risk of having a fetus with Down's Syndrome, the method comprising the steps of:

measuring at least one screening marker level from one of a first and second stage of pregnancy by assaying a sample obtained from the pregnant woman at said first or second stage of pregnancy for at least one biochemical screening marker;

measuring a level of the same said at least one screening marker at the other of said first and second stage of pregnancy by assaying a sample obtained from the pregnant woman at said other stage of pregnancy for said at least one biochemical screening marker; and

determining a quantitative estimate of the risk of Down's Syndrome using the measured screening marker levels from both the first and second stages of pregnancy.

21. A method of determining whether a pregnant woman is at an increased risk of having a fetus with Down's Syndrome, the method comprising the steps of:

measuring at least one screening marker level from one of a first and second stage of pregnancy by assaying a sample obtained from the pregnant woman at said first or second stage of pregnancy for at least one biochemical screening marker;

determining a first quantitative estimate of the risk of Down's syndrome using said measured screening marker level from the first stage of pregnancy;

measuring a level of the same said at least one screening marker at a second stage of pregnancy by assaying a sample obtained from the pregnant woman at said second stage of pregnancy for said at least one biochemical screening marker; and

determining a quantitative estimate of the risk of Down's Syndrome using the measured screening marker levels from both the first and second stages of pregnancy.

22. A method as claimed in claim 20 or 21 wherein said at least one biochemical screening marker is a marker at one of said first and second stages of pregnancy but not at the other.

23. A method as claimed in claim 20, 21, or 22 wherein said measured screening marker levels from said first and second stages of pregnancy are highly correlated with one another.

24. A method as any one of claims 20 to 23 further comprising:

measuring a second screening marker level from one of said first and second stage of pregnancy by:

assaying a sample obtained from the pregnant woman at said first or second stage of pregnancy for said a second biochemical screening marker;

measuring a level of said second screening marker at the other of said first and second stage of pregnancy by:

assaying a sample obtained from the pregnant woman at said other stage of pregnancy for said second biochemical screening marker; and

wherein said determining determines said Down's risk estimate further using the measured second screening marker levels from both said first and second stages of pregnancy.

25. A method as claimed in claim 24 wherein said second biochemical screening marker is a marker at one of said first and second stages of pregnancy but not at the other.

26. A method as claimed in claim 24 or 25 wherein said measured second screening marker levels from said first and second stages of pregnancy are highly correlated with one another.

27. A method as claimed in any one of claims 20 to 26 further comprising:

measuring at least one ultrasound screening marker from an ultrasound scan taken at one of said first and second stages of pregnancy; and

wherein determining determines said Down's risk estimate further using said ultrasound screening marker.

28. Processor control code to, when running, implement the method of any one of claims 1 to 19.

29. A carrier carrying the processor control code of claim 28.

30. A computer program to, when running, determine a pregnant woman's risk of having a fetus with Down's syndrome, the computer comprising code to:

input measurement data from a measurement of at least one screening marker level from one of a first and second stage of pregnancy obtained by assaying a sample obtained from the pregnant woman at said first or second stage of pregnancy for at least one biochemical screening marker;

input measurement data from a measurement of a level of the same said at least one screening marker at the other of said first and second stage of pregnancy obtained by assaying a sample obtained from the pregnant woman at said other stage of pregnancy for said at least one biochemical screening marker; and

determine a quantitive estimate of the risk of Down's syndrome using the measured screening marker levels from both the first and second stages of pregnancy.

31. A computer system storing the processor control code of claim 28 or computer program of claim 30.

32. A computer system for providing risk data representing a likelihood of a fetus carried by a pregnant mother having a chromosomal abnormality, a first biological parameter being suitable for screening said fetus for said chromosomal abnormality, the computer system comprising:

a data store operable to store data to be processed;

an instruction store storing processor implementable instructions; and

a processor coupled to said data store and to said instruction store and configured to load and implement said stored instructions, said instructions comprising instructions for controlling the processor to:

input first data from a first stage of pregnancy of said mother, said first data comprising data representing a first value of said first biological parameter;

input second data from a second, later stage of said pregnancy, said second data comprising data representing a second value of said first biological parameter;

determine said risk data from said first and second data; and

output said determined risk data.